

**REMARKS**

Claims 1-51 were pending in the application. Claims 1-7 have been withdrawn with traverse. The foregoing amendment amends Claims 8, 15, 18-20, 29, 33, 40 and 45, and adds new Claims 52-87. Support for new Claims 52-87 can be found throughout the specification as originally filed, for example, on page 17 line 8; page 17 line 13; page 17 line 13; and throughout the specification and figures. Therefore, Claims 8-87 will be pending upon entry of the foregoing amendment. No new matter has been added, no new issues are raised.

Withdrawal of Claims 1-8 and/or amendments to the claims should in no way be construed as acquiescence to any of the Examiner's actions and/or rejections. The withdrawal of Claims 1-8 and/or amendments to the claims are being made solely to expedite prosecution of the above-identified application. Applicants reserve the option to further prosecute the same or similar claims in the present or another patent application.

**RESPONSE TO RESTRICTION REQUIREMENT**

The Examiner has required restriction between the following inventions in the above-identified application:

Group I: Claims 1-7, drawn to a system for modeling, simulation and analysis of a biological system; and

Group II: Claims 8-51, drawn to a method or system for modeling, simulation and analysis of a biological process.

Accordingly, Applicants hereby elect Group II, Claims 8-51 in part for continued examination with traverse. In sum, upon entry of the present amendment, Applications submit new Claims 52-87 will be directed to the invention of Group II.

Applicants respectfully submit the foregoing Restriction Requirement is improper. Applicants traverse the Restriction Requirement to the extent that Groups I and II should be reformed as a single group containing Claims 1-51 and new Claims 52-87. Applicants' grounds for traverse are set forth below.

Contrary to the Examiner's position, the integrated modeling and simulation of the claims of Groups I and II are capable of being used together and have the same mode of operation, function and effect, e.g., modeling components. Specifically, the starting points of each group are the same, e.g., constructing a model and, in further like fashion, generating dynamic behavior of the model. In addition, as Groups I and II are of the same class and subclass, and a literature search of the Groups I and II would be nearly, if not completely, co-extensive. Accordingly, Applicants respectfully submit that a sufficient search and examination with respect to the modeling and simulation of a biological system and the modeling and simulation of a biological process can be made without a serious burden on an Examiner. As the MPEP states: [i]f the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to independent or distinctive inventions. *See*, MPEP § 803.

Applicants thus respectfully submit the search with regard to a system and method for modeling a biological system would be co-extensive with a search for a system and method for modeling a biological process and would not place a burden on the Examiner.

Accordingly, Applicants respectfully request the Examiner to withdraw the Restriction Requirement and join the claims of Groups I and II as a single group.

### **RESPONSE TO ELECTION OF SPECIES**

In the Office Action the Examiner requests two species elections as applied to claim Groups I and II.

#### **First Species Election:**

The Examiner has also requested election of a single species with regard to the mechanism by which a result of the dynamic behavior of the constructed model is generated. The species identified are:

- (A) using a stochastic computational model;
- (B) using a discreet time based computational model; and

(C) using a continuous time based computational model.

Applicants traverse the election requirement to the extent searching does not require a distinct strategy because the searches for the species would be co-extensive. Contrary to the Examiner's position, the various species mechanisms by which a result of the dynamic behavior of the constructed model is generated are capable of use together and a literature search of all species would be nearly, if not completely co-extensive. Accordingly, Applicants respectfully submit that a sufficient search and examination with respect to the claimed species can be made without serious burden on the Examiner.

However, in order to be considered responsive to the instant Office Action, Applicants hereby elect using a stochastic computational model. Claims 8-12, 15-18, 20-30, 33-37, 40-43, 45-50 and 52-87 read on the elected species.

It is Applicants understanding that examination will proceed on the elected species and the entire scope of the invention encompassing the elected species. That is, upon allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitation of an allowable generic claim as provided by 37 CFR 1.141. Furthermore, Applicants reserve the right to file divisional applications on the remaining subject matter, if so desired.

Second Species Election:

The Examiner has also requested election of a single species with regard to the mechanism by which the constructed model is analyzed. The mechanisms identified are:

- (D) using bifurcation analysis;
- (E) using sensitivity analysis;
- (F) using parameter estimation;
- (G) using non-linear solver; and
- (H) using flex balance analysis.

Applicants respectfully traverse the foregoing election requirement and submit that the requirement is improper. Contrary to the Examiner's position, the various analysis species are capable of use together and a literature search of all species would be nearly, if not completely

co-extensive. Accordingly, Applicants respectfully submit that a sufficient search and examination with respect to the claimed species can be made without serious burden on the Examiner.

However, in order to be considered responsive to the instant Office Action, Applicants hereby elect using sensitivity analysis as the mechanism at which the constructed model is analyzed. Claims 8-12, 15-18, 20, 22, 26-30, 33-37, 40-43, 45, 47 and 52-87 read on the elected species.

It is Applicants understanding that examination will proceed on the elected species and the entire scope of the invention encompassing the elected species. That is, upon allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitation of an allowable generic claim as provided by 37 CFR 1.141. Furthermore, Applicants reserve the right to file divisional applications on the remaining subject matter, if so desired.

### **CONCLUSION**

It is respectfully submitted that this application is in condition for allowance. If there are any remaining issues, or if the Examiner believes that a telephone conversation with Applicants attorney would be helpful in expediting prosecution of this application, the Examiner is invited to call the undersigned at 617-227-7400. Please charge any additional fees or credit any overpayments to our Deposit Account No. 12-0080 under Order No. MWS-108 from which the undersigned is authorized to draw.

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Respectfully submitted,

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